WHAT IS CLAIMED IS:

1. A fiber plate formed by arranging in mutually adjacent manner a plurality of individual fiber plates of a same thickness so as to provide a light guiding plane larger in area than the light guiding plane of said individual one fiber plate, wherein:

each of said individual fiber plates is composed of a group of optical fibers having mutually parallel axes; and

lateral faces of said plurality of individual fiber plates are mutually so bonded that the axes of the optical fibers thereof become mutually parallel.

2. A fiber plate according to claim 1, wherein the axis of said optical fiber is parallel or inclined to the normal line to said light guiding plane.

3. A fiber plate according to claim 1, wherein at least either of said light guiding plane and said lateral face is a polished surface.

4. A fiber plate according to claim 1, wherein said lateral faces are mutually bonded by at least either of an adhesive material or a metal.

5. A fiber plate according to claim 1, wherein said bonding portion is a radiation intercepting

bonding portion.

6. A fiber plate according to claim 1, wherein said lateral face includes a face crossing the normal line to said light guiding plane.

7. A fiber plate formed by arranging in mutually adjacent manner a plurality of individual fiber plates of a same thickness so as to provide a light guiding plane larger in area than the light guiding plane of said individual one fiber plate, wherein:

each of said plurality of individual fiber plates is composed of a group of optical fibers having axes parallel to the normal line to said light guiding plane;

lateral faces of said plural individual fiber plates are mutually so bonded that the axes of the optical fibers thereof become mutually parallel; and

the front and rear surfaces of said fiber plate, constituting light guiding planes thereof, have a same area.

8. A fiber plate according to claim 7, wherein the mutually parallel lateral faces of said plural individual fiber plates are bonded.

9. A fiber plate according to claim 7, wherein

said light guiding plane is a polished surface.

10. A fiber plate according to claim 7, wherein said lateral face is a polished surface.

11. A fiber plate according to claim 7, wherein said lateral faces are mutually bonded by at least either of an adhesive material or a metal.

12. A fiber plate according to claim 7, wherein said bonding portion is a radiation intercepting bonding portion.

13. A fiber plate according to claim 7, wherein said lateral face includes a face crossing the normal line to said light guiding plane.

14. A radiation image pickup apparatus provided with a wavelength converting member for converting radiation into light, a photoelectric converting element for converting the light into an electrical signal and a fiber plate provided between said wavelength converting member and said photoelectric converting element:

wherein said fiber plate is formed by arranging in mutually adjacent manner plural individual fiber plates of a same thickness so as to provide a light guiding

plane larger in area than the light guiding plane of said individual fiber plate, each of said plural individual fiber plates is composed of a group of optical fibers having mutually parallel axes, and lateral faces of said plural individual fiber plates are mutually so bonded that the axes of the optical fibers thereof become mutually parallel.

15. An apparatus according to claim 14, wherein the axis of said optical fiber is parallel or inclined to the normal line to said light guiding plane.

16. An apparatus according to claim 14, wherein at least either of said light guiding plane and said lateral face is a polished surface.

17. An apparatus according to claim 14, wherein said lateral faces are mutually bonded by at least either of an adhesive material or a metal.

18. An apparatus according to claim 14, wherein said bonding portion is a radiation intercepting bonding portion.

19. An apparatus according to claim 14, wherein said lateral face includes a face crossing the normal line to said light guiding plane.

20. An apparatus according to claim 14, wherein the width of the gap between mutually adjacent said individual fiber plates is smaller than the width of a pixel of said photoelectric converting element.

21. An apparatus according to claim 14, wherein:

said photoelectric converting element includes plural pixels of mutually different light receiving areas; and

the width of the gap between mutually adjacent said individual fiber plates is smaller than the width of a pixel having a smallest light receiving area in said photoelectric converting element.

22. An apparatus according to claim 14, wherein the gap between mutually adjacent said individual fiber plates is positioned on a gap between chips constituting said photoelectric converting element.

23. An apparatus according to claim 14, wherein the gap between mutually adjacent said individual fiber plates is positioned on an effective pixel area of a chip constituting said photoelectric converting element.

24. An apparatus according to claim 14, wherein a joint line formed by the gap between mutually adjacent

said individual fiber plates and a joint line formed by the gap between chips constituting said photoelectric converting element mutually cross with an angle larger than 0° and smaller than 90°.

25. A radiation image pickup apparatus provided with a wavelength converting member for converting radiation into light, a photoelectric converting element for converting the light into an electrical signal and a fiber plate provided between said wavelength converting member and said photoelectric converting element:

wherein said fiber plate is formed by arranging in mutually adjacent manner plural individual fiber plates of a same thickness so as to provide a light guiding plane larger in area than the light guiding plane of said individual one fiber plate;

each of said plural individual fiber plates is composed of a group of optical fibers having axes parallel to the normal line to said light guiding plane;

lateral faces of said plural individual fiber plates are mutually so bonded that the axes of the optical fibers thereof become mutually parallel; and

the front and rear surfaces of said fiber plate, constituting light guiding planes thereof, have a same area.

26. An apparatus according to claim 25, wherein the lateral face of said individual fiber plate is a polished surface.

27. An apparatus according to claim 25, wherein said light guiding plane is a polished surface.

28. An apparatus according to claim 25, wherein said lateral faces are mutually bonded by at least either of an adhesive material or a metal.

29. An apparatus according to claim 25, wherein said bonding portion is a radiation intercepting bonding portion.

30. An apparatus according to claim 25, wherein the lateral face of said individual fiber plate includes a face crossing the normal line to said light guiding plane.

31. An apparatus according to claim 25, wherein the width of the gap between mutually adjacent said individual fiber plates is smaller than the width of a pixel of said photoelectric converting element.

32. An apparatus according to claim 25, wherein: said photoelectric converting element includes

plural pixels of mutually different light receiving areas; and

the width of the gap between mutually adjacent said individual fiber plates is smaller than the width of a pixel having a smallest light receiving area in said photoelectric converting element.

33. An apparatus according to claim 25, wherein the gap between mutually adjacent said individual fiber plates is positioned on a gap between chips constituting said photoelectric converting element.

34. An apparatus according to claim 25, wherein the gap between mutually adjacent said individual fiber plates is positioned on an effective pixel area of a chip constituting said photoelectric converting element.

35. An apparatus according to claim 25, wherein a joint line formed by the gap between mutually adjacent said individual fiber plates and a joint line formed by the gap between chips constituting said photoelectric converting element mutually cross with an angle larger than 0° and smaller than 90°.

36. A radiation image pickup apparatus formed by arranging a plurality of a radiation image pickup unit

provided with a wavelength converting member for converting radiation into light, a photoelectric converting element chip for converting the light into an electrical signal and a fiber plate provided between said wavelength converting member and said photoelectric converting element:

wherein lateral faces of said individual fiber plates in the plural radiation image pickup units are mutually bonded in such a manner that the axes of the optical fibers thereof become mutually parallel.

37. An apparatus according to claim 36, wherein the lateral face of said individual fiber plate is a polished surface.

38. An apparatus according to claim 36, wherein said light guiding plane is a polished surface.

39. An apparatus according to claim 36, wherein said wavelength converting, said photoelectric converting element chip and said individual fiber plate in said radiation image pickup unit have substantially same areas.

40. A method for producing a fiber plate, comprising:

a step of preparing plural individual fiber plates

of a same thickness, each composed of a group of optical fibers having mutually parallel axes;

a step of arranging in mutually adjacent manner said plural individual fiber plates so as to provide a light guiding plane larger in area than the light guiding plane of said individual one fiber plate; and

a step of bonding the lateral faces of mutually adjacent said individual fiber plates in such a manner that the axes of said optical fibers thereof become mutually parallel.

41. A method according to claim 40, further comprising:

a step of bonding at least two of said plural individual fiber plates thereby forming a set of the individual fiber plates; and

a step of bonding a plurality of said set of the individual fiber plates thereby forming said fiber plate.

42. A method according to claim 40, wherein, after polishing the lateral face of said set of the individual fiber plates, the plural sets of said individual fiber plates are bonded in such a manner that said lateral faces are mutually adjacent.

43. A method according to claim 40, wherein the

lateral faces of mutually adjacent said individual fiber plates are bonded with a metal or an adhesive.

44. A method according to claim 40, wherein, after the bonding of the plural individual fiber plates, the surfaces thereof are polished.

45. A method for producing a fiber plate, comprising:

a step of preparing plural individual fiber plates of a same thickness, each composed of a group of optical fibers having axes parallel to the normal line to a light guiding plane;

a step of arranging in mutually adjacent manner said plural individual fiber plates so as to provide a light guiding plane larger in area than the light guiding plane of said individual one fiber plate; and

a step of bonding the lateral faces of mutually adjacent said individual fiber plates in such a manner that the axes of said optical fibers thereof become mutually parallel.

46. A method according to claim 45, further comprising:

a step of bonding at least two of said plural individual fiber plates thereby forming a set of the individual fiber plates; and

a step of bonding a plurality of said set of the individual fiber plates thereby forming said fiber plate.

47. A method according to claim 45, wherein, after polishing the lateral face of said set of the individual fiber plates, the plural sets of said individual fiber plates are bonded in such a manner that said lateral faces are mutually adjacent.

48. A method according to claim 45, wherein the lateral faces of mutually adjacent said individual fiber plates are bonded with a metal or an adhesive.

49. A method according to claim 45, wherein, after the bonding of the plural individual fiber plates, the surfaces thereof are polished.

50. A method for producing a fiber plate, comprising:

a step of preparing plural individual fiber plates of a same thickness, each composed of a group of optical fibers having mutually parallel axes;

a step of arranging in mutually adjacent manner said plural individual fiber plates so as to provide a light guiding plane larger in area than the light guiding plane of said individual fiber plate; and

a step of, after bonding the lateral faces of mutually adjacent said individual fiber plates, polishing the surfaces thereof.

51. A method for producing a radiation image pickup apparatus comprising:

a step of preparing a fiber plate according to claim 1 or 7; and

a step of adhering said fiber plate to a photoelectric converting element.

52. A method according to claim 51, wherein, after the adhesion of said fiber plate of which surface is planarized with said photoelectric converting element, a sheet-shaped wavelength converting member is adhered to said fiber plate.

53. A method according to claim 51, wherein, after said fiber plate of which surface is planarized is adhered to a sheet-shaped wavelength converting member, it is adhered to said photoelectric converting element.

54. A radiation image pickup system comprising:

a radiation image pickup apparatus according to claim 14, 25 or 36;

signal processing means for processing a signal

from said radiation image pickup apparatus;

recording means for recording a signal from said signal processing means;

display means for displaying the signal from said signal processing means; and

a radiation source for generating said radiation.